



## United States Department of the Interior

### FISH AND WILDLIFE SERVICE

East Lansing Field Office (ES)  
2651 Coolidge Road, Suite 101  
East Lansing, Michigan 48823-6316

IN REPLY REFER TO:

December 1, 2017

Mary P. Logan  
U.S. Environmental Protection Agency  
77 W. Jackson, SR-6J  
Chicago, Illinois 60604-3590

Re: Draft Tittabawassee River Segment 6 and 7 (OU1) Response Proposal for the  
Tittabawassee River/Saginaw River & Bay Site, Dow Submittal Number 2017.069

Dear Ms. Logan:

Attached please find the Natural Resource Trustees' comments on the Draft Tittabawassee River Segment 6 and 7 (OU1) Response Proposal. We appreciate EPA's efforts to work closely with the Trustees and your consideration of our comments on this Draft Response Proposal.

Please feel free to contact me at 517-351-8324 if you have questions. We look forward to continuing to provide technical assistance regarding resource management goals for this site.

Sincerely,

Lisa L. Williams  
Trustee Coordinator

attachment

cc: BJ Howerton, BIA  
Sally Kniffen, SCIT  
Polly Synk, MAG  
Judie Alfano, MDEQ  
Allan Taylor, MDEQ  
Joseph Victory, MDEQ  
Jessica Mistak, MDNR

Todd Konechne, Dow Chemical Company

## Natural Resource Trustee Comments on Segment 6 and 7 Response Proposal

This document summarizes the Tittabawassee River Natural Resource Trustees comments on the Draft Tittabawassee River Segment 6 and 7 (OU1) Response Proposal (“Proposal”), prepared by the Tittabawassee and Saginaw River Team and submitted by The Dow Chemical Company on October 20, 2017.

### Specific Comments

1. Section 3.3.2.1, p. 26. *PCOI Results from 2007–2014 Bank Soil Coring*

*Comment:* It is not clear from the figures (e.g. Figures 3.7 and 3.8) which bank samples correspond to post-industrial levees or other geomorphic features. For example, does the sample at 1235+00 at the Green Point Environmental Learning Center characterize an industrial levee at that location? Figure 2.2F in the Floodplain Response Proposal (May, 2014) shows an industrial levee extending to either side of 1240+00. Based on Figure 3.8D in the Segment 6 and 7 Draft Response Proposal, the location at this core appears to have lost material from the top of the bank and have TEQ concentrations greater than 5,000 ppt at the bank surface. It seems surprising that this area is shown in Figures 3-29B and 3-31B as having a low TEQ index. The adjacent incremental sediment composite shown in Figure 3-6B at RXX-1240+00-ICCS and then next two downstream composites also have elevated TEQ concentrations at 956, 611, and 878 ppt, respectively, with an additional composite at 978 alongside the 611 ppt composite. This suggests the potential for an ongoing source of TEQ from the bank in this area and the need for additional review in this area.

2. Section 3.5.1, p. 29: *Segment 1 and 2 Benthic Community Conditions*

*Comment:* We have made comments on the corresponding paragraph on each Proposal and are doing so again because Dow continues to repeat their conclusion that “the benthic community in Segments 1 and 2 is diverse, abundant, and comparable to ....reference conditions.” The 2010 Benthic Community Study was performed without the involvement of the Trustees. We are uncertain of how representative the sampling locations were and are not aware of any agency oversight that validated the site selection, observations, scoring, and calculation of metrics. As Dow notes in this proposal section, no sample locations were included in Segments 6 and 7, so sampling will need to be performed if we are to have baseline information on benthic communities, including

freshwater mussels, prior to implementation of work on Sediment Management Areas (SMAs) in Segments 6 and 7.

3. Section 3.5.3, p. 30+. *Threatened and Endangered Species*

*Comment:* Despite the footnote to Table 3-5a that federal and state status of listed species was accessed in May of 2017, the information is not entirely accurate for that date. For example, the snuffbox mussel (*Epioblasma triquetra*) was listed as endangered under the federal ESA in March of 2012, yet no federal status is given on the table. This same issue was included in our previous comments, yet Dow has not addressed this.

Given the number of state and federally listed species of freshwater mussels that are potentially present in Segments 4 and 5, Dow should be required to conduct freshwater mussel surveys using qualified specialists prior to conducting work at SMAs. Although we are particularly concerned about the federal and state endangered snuffbox and the state endangered hickorynut (*Obovaria olivaria*), we are also concerned with freshwater mussels in general because they are long-lived species with low rates of recruitment and recovery from disturbance. In 2008, the USFWS conducted mussel surveys around the Shiawassee National Wildlife Refuge that included three sites on the Tittabawassee River: just upstream of Freeland Road, just upstream of South Center Road, and in the cross channel by Green Point Island. At the two upstream sites, the biologists found 15 and 10 species of mussels, respectively, with the live species including mapleleaf (*Quadrula pustulosa*), pink heelsplitter (*Potamilus alatus*), deertoe (*Truncilla truncata*), white heelsplitter (*Lasmigona complanata*), mucket (*Actinonaias ligamentina*), and black sandshell (*Ligumia recta*) (Jim Boase, USFWS, unpublished data). Should freshwater mussels be found in a proposed SMA, the Trustees could work with Dow and U.S. EPA on protocols to translocate mussels to the nearest suitable mussel bed, preferable upstream in order to facilitate re-colonization of the affected area.

Without additional surveys for mussels, in particular, it is not clear to the USFWS or MDNR that Dow's final statement in this section can be supported: "Regardless, implementing potential remedial actions would meet any requirements of the Endangered Species Act or state regulations, as appropriate." In order to make a statement like this, the Proposal needs to include plans to conduct surveys and descriptions of what measures will be taken should those surveys find listed species (e.g. notification so that U.S. EPA can consult, avoiding or transplanting listed plants, translocating mussels, avoiding maternity colony trees).

4. Section 3.6.3, p. 31. *Identification of Historic or Culturally Significant Resources*

*Comment:* This section lists resources for identifying known or potential cultural or historic resources, but does not affirmatively state that Dow has consulted or will consult these resources other than searching the National Register of Historic Places. Dow states in this section that “USEPA is the entity with responsibility for compliance with Section 106.” In talking with both State and Tribal Historic Preservation Officers, the Trustees understand that it is inappropriate to merely rely on a discovery plan. These experts should be consulted during the planning stage so that they can determine if surveys are needed. The discovery plan is specifically intended for unanticipated discoveries of remains or artifacts, so experts with local knowledge should be consulted about what can reasonably be anticipated prior to beginning construction.

The Green Point area near the confluence of the Tittabawassee and Shiawassee Rivers is particularly rich in archeological resources. Areas bordering the Tittabawassee and Shiawassee Rivers within the Shiawassee NWR are considered to among the most archaeologically rich sites in the State of Michigan (Castle Museum 2015). Shiawassee NWR conducted a comprehensive assessment of cultural resources within the administrative boundary of the Refuge (Robertson et al. 1999). As related within the Refuge’s Comprehensive Conservation Plan (USFWS 2001), the Refuge has identified 31 cultural resource sites on the Refuge and an additional 42 sites on additional lands within the expansion area of the Refuge. These include prehistoric archaeological sites, historic archeological sites (Native American and Western), industrial and mining sites, farmsteads, and timbering sites. Evidence for early Paleo-Indian cultures (10,000-8000 B.C.) consists only of fluted points in private collections. Other prehistoric cultures are represented in the archeological record: Archaic (8000-550 B.C.) and Woodland (600 B.C.-1600 A.D.).

5. Section 3.9.1, p. 38. *Banks in Hardened Surface Areas*

*Comment:* The Trustees have previously shared with Dow that they envision bank softening along the shoreline of the former Germania golf course as a desirable restoration project. The Shiawassee National Wildlife Refuge may choose to pursue bank restoration through removal of the hard surface and re-shaping of the left descending bank in Reach WW and the upstream end of Reach XX. Given that this is a reasonably foreseeable use, U.S. EPA should not consider this area in the category of “hardened shoreline”, should request characterization of this area for TEQ concentrations, and should consider whether a BMA or BMAs may be warranted in this area. Currently, the draft Response Proposal does not appear to include any analytical results from this area that is marked as currently being “hard surface” in Figures 3-29, 3-30, and 3-31.

6. Section 3.9.5, p. 44. *Results of the Segment 6 and 7 BMA Evaluation*

*Comment:* Please see comment #1, above, concerning the potential need for additional review of core samples that represent industrial levees and have elevated TEQs. We did not review the data at all of the industrial levee locations in Segments 6 and 7, but noted one place where did look for this situation in the area of 1235+00 in Segment 7.

The Trustees remain concerned about the long term effectiveness of containing hazardous substances in place along a dynamic river system. Given bank stabilization as an approach, the Trustees appreciate the use of soft engineering and native species as an alternative to the use of hard engineering approaches utilizing concrete or steel to physically stabilize the banks. However, techniques like canopy management and bank smoothing do change the type of habitat present and fix the river channel in place laterally at the BMAs. Erosive forces at the stabilized BMAs, particularly during bank full events, will be transferred to banks downstream or to vertical erosion of the sediments near the BMA.

7. Section 4.3.2.7, p. 53 et seq. *ARARs or TBCs*

*Comment:* Part 55, Air Pollution Control, of the NREPA, and the Federal Clean Air Act (CAA) still do not appear to be included. Rules prohibiting the emission of air contaminants in quantities that cause injurious effects on human health, animal life, plant life of significant economic value, and/or property are established in Part 55 of the NREPA. The CAA establishes requirements for constituent emission rates in accordance with national ambient air quality standards. Relevant Part 55 of the NREPA and CAA requirements are expected to relate primarily to fugitive dust control.

8. Section 5.1.2. p. 60. *Long-term monitoring and maintenance would be performed as needed on Segments 6 and 7 SMAs where capping is implemented. Monitoring would ensure the caps achieve RAOs by successfully isolating underlying sediment from physical disturbance and biological contact, and would ensure long-term cap integrity.*

*Comment:* Stabilization at one location in a river usually results in destabilization in another, so long-term monitoring must include areas beyond the footprint of any cap. For example, erosion may occur in areas where flow is diverted by a structure and not just at the end of the structure. Dow's response to this comment in previous draft Proposals stated that "monitoring will occur at both the upstream and downstream end of the bank management areas to determine if any erosion is occurring", but this is not reflected in the language of this Proposal: the first sentence quoted still can be read as including performing monitoring only in the footprint of the implemented cap.

9. Section 6.3.4.3. p.77. *Both wet and dry removal would eliminate the benthic community in the short term. Removal of sediment also results in slower benthic recolonization rates compared with capping; benthic recolonization of removal areas typically occurs within months or several years.” Both wet and dry removal would eliminate the benthic community in the short term. Removal of the sediment also results in slower benthic recolonization rates compared with capping; benthic recolonization of removal areas typically occurs within months or several years (Herbich 2000, Szymelfenig et al 2006, Alcoa 2008). Given the size of the SMAs, recolonization would be expected to occur relatively quickly. To accelerate the restoration of the river bottom, placement of large woody debris or subsurface structures may be considered during remedial design.*

*Comment:* The Trustees appreciate the consideration for placement of large woody debris to provide structure, differential flows, and woody surface area that in turn provide microhabitats for production of algae, macroinvertebrates, and fish. Placing large woody debris at or near removal areas would help mitigate short-term impacts of the removal.

10. Section 6.3.4.2 and other sections describe the potential need to cut trees.

*Comment:* Because of the possible presence of two federally listed species of bats, other tree-roosting species of bats, and nesting migratory birds in the warmer months, we appreciate Dow’s continued efforts to perform tree-cutting and canopy management in the winter as a way of avoiding or minimizing impacts to those groups of species.

11. Section 6.3.4.3, p. 78. *Green Point Island is a pristine, forested island within the Shiawassee National Wildlife Refuge that is only accessible by boat. If Green Point Island is used as an access point to SMA 7-2, trees may need to be removed to allow access to the river, and a bank area may require clearing and preparation to allow equipment access to the channel, disrupting the existing ecosystem. Any impacts related to construction support and access facilities would be restored following completion of the response action, although wooded areas would be restored with less mature vegetation.*

*Comment:* The Trustees encourage early coordination with the Shiawassee National Wildlife Refuge if significant impacts like those described in this paragraph are anticipated on federal land. Note also that SMA 7-1 also appears to be adjacent to land managed by the Refuge while still owned by the City of Saginaw.

#### Literature Cited

- Castle Museum. 2015. Shiawassee National Wildlife Refuge. Castle Museum of Saginaw County History. <http://www.castlemuseum.org/#!shiawassee-refuge/c1z9q>. Accessed December 8, 2015.
- Robertson, J. A., K. C. Taylor, M. J. Hambacher, W. A. Lovis, and G. W. Monaghan. 1999. Overview study of archaeological and cultural values on Shiawassee, Michigan Islands, and Wyandotte National Wildlife Refuges in Saginaw, Charlevoix, Alpena, and Wayne Counties, Michigan. Prepared for U.S. Fish and Wildlife Service under contract number 301818M494. Two volumes.
- USFWS. 2001. Shiawassee National Wildlife Refuge: Comprehensive Conservation Plan. U.S. Fish and Wildlife Service Region 3. Available: <https://www.fws.gov/midwest/planning/shiawasse/ccp/fullccp.pdf>. Accessed 8/2017.